Comparison of Wound Complications in Open vs Closed Lateral Internal Sphincterotomy for Anal Fissure (Presentation)

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Comparison of Wound Complications in Open vs Closed Partial Lateral Internal Sphincterotomy for Anal Fissure

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Background

- Anal fissure: ulcer-like, longitudinal tear in the anal canal, distal to the dentate line
- Presents as sharp rectal pain and bleeding associated with bowel movements
- Trauma likely the inciting event
- Hypertonia of internal anal sphincter
- Diminished perfusion to anoderm
- Rx: Over half of fissures heal with conservative measures
- Persistent fissures require operative intervention
Purpose

- Partial lateral internal sphincterotomy (PLIS) is considered the preferred surgical treatment for chronic anal fissure in most patients.
- PLIS can be performed by either the open or closed technique, with equivalent efficacy in fissure healing rates\(^1-4\).
- Few studies have specifically compared wound complication rates between the two techniques.
- Aim: compare the incidence of wound complications at the sphincterotomy site between open and closed technique.
Lateral Internal Sphincterotomy

Closed technique

Blade inserted in intersphincteric groove and passed cephalad in intersphincteric plane to level of dentate line.

Open technique

Skin incision made external to anal verge.

Hypertrophied band of internal sphincter freed and elevated into incision.

Internal sphincter divided; wound usually left open for drainage.
Methods

- Retrospective chart review of patients in a single specialty practice undergoing open or closed PLIS for chronic anal fissure over a 5 year period

- Total of 253 patients identified
  - 88 had open sphincterotomy
  - 165 had closed sphincterotomy

- Preoperative variables:
  - Age
  - Gender
  - Location of fissure
## Demographics

### Table 1:

<table>
<thead>
<tr>
<th></th>
<th>Open (n = 88 pts)</th>
<th>Closed (n = 165 pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Median Age</strong></td>
<td>47.9</td>
<td>46.3</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48 (54.6%)</td>
<td>87 (52.7%)</td>
</tr>
<tr>
<td>Female</td>
<td>40 (45.4%)</td>
<td>78 (47.2%)</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posterior</td>
<td>62 (70.5%)</td>
<td>120 (72.7%)</td>
</tr>
<tr>
<td>Anterior</td>
<td>20 (22.7%)</td>
<td>32 (19.4%)</td>
</tr>
<tr>
<td>Other</td>
<td>6 (6.8%)</td>
<td>13 (7.9%)</td>
</tr>
</tbody>
</table>
Methods

- Exclusion criteria:
  - Active infection at time of surgery
  - Inflammatory bowel disease
  - Lost to follow-up

- Statistical analysis: Chi-square, Fisher’s exact test, Logistic regression
Results

- Compared to closed sphincterotomy, open sphincterotomy had increased incidence of:
  - Wound infection
  - Return to operating room
  - Delayed healing

- Fissure healing rate was equivalent with both techniques
## Results

### Table 2:

<table>
<thead>
<tr>
<th></th>
<th>Open (n = 88 pts)</th>
<th>Closed (n = 165 pts)</th>
<th>p-value</th>
<th>Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection</td>
<td>13 (14.8%)</td>
<td>4 (2.4%)</td>
<td>0.0002</td>
<td>0.141</td>
</tr>
<tr>
<td>Delayed Healing</td>
<td>27 (30.7%)</td>
<td>21 (12.6%)</td>
<td>0.0005</td>
<td>0.329</td>
</tr>
<tr>
<td>Re-operation</td>
<td>8 (9.1%)</td>
<td>3 (1.8%)</td>
<td>0.0183</td>
<td>0.185</td>
</tr>
<tr>
<td>Fissure Healed</td>
<td>82 (93.2%)</td>
<td>163 (98.8%)</td>
<td>0.0686</td>
<td>N/A</td>
</tr>
</tbody>
</table>

A p-value of <0.05 was considered statistically significant
Conclusions

- Open and closed sphincterotomy have equivalent fissure healing rates, as has been shown previously\textsuperscript{1-4}

- In our study, the **open** technique appears to have a significantly higher wound complication rate, including higher incidence of surgical site infection and delayed wound healing

- When technically feasible, **closed** sphincterotomy appears to be the preferred technique
Discussion

- In general, our wound complication rates are higher than previously reported\textsuperscript{5-6}
- Retrospective study
- Effect of wound complications on incontinence
References


